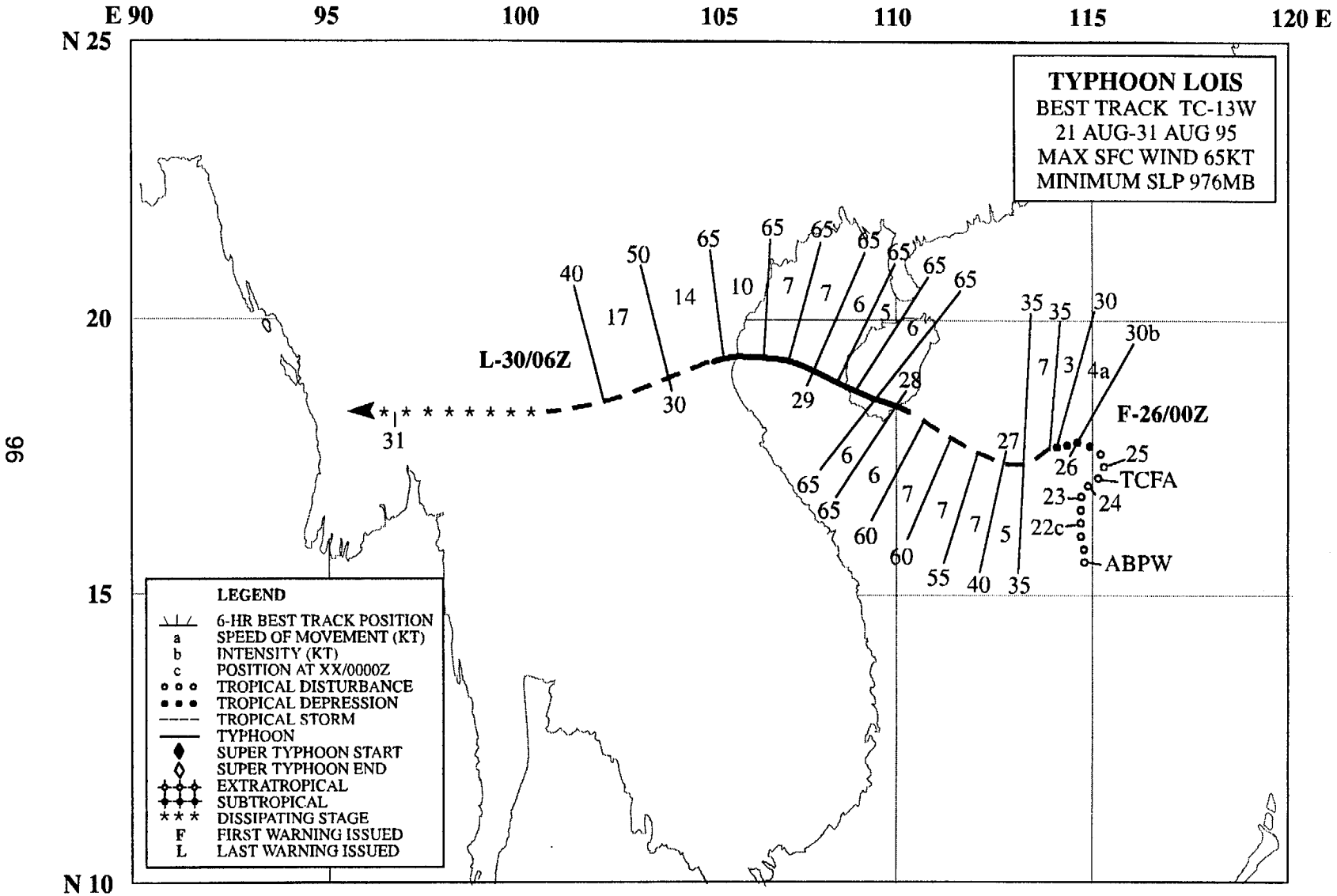
E 90
95
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TYPHOON LOIS
BEST TRACK TC-13W
21 AUG-31 AUG 95
MAX SFC WIND 65KT
MINIMUM SLP 976MB
L-30/06Z
F-26/00Z
TCFA
ABPW
LEGEND
6-HR BEST TRACK POSITION
a SPEED OF MOVEMENT (KT)
b INTENSITY (KT)
c POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED

TYPHOON LOIS (13W)

I. HIGHLIGHTS

As Typhoon Kent (12W) was developing east of the Philippines and Tropical Storm Janis (10W) was crossing the southwestern Ryukyu Islands, Lois formed in the South China Sea. This was one of only three occasions during 1995 that the JTWC was simultaneously warning on three tropical cyclones in the western North Pacific. Lois was one of an unusually large number of tropical cyclones that formed in the South China Sea during 1995.

II. TRACK AND INTENSITY

On 21 August, synoptic data indicated the presence of a weak cyclonic circulation center near 15°N 115°E that accompanied an area of deep convection. This tropical disturbance was first mentioned on the 210600Z August Significant Tropical Weather Advisory. For two days, the disturbance drifted slowly to the north, and its deep convection became better organized. Beginning on 23 August, the disturbance moved toward the northeast, possibly in response to a surge in the southwest monsoon that flowed past the pre-Lois disturbance northeastward to the circulation of Janis (10W). A Tropical Cyclone Formation Alert was issued at 240830Z when the system appeared to be improving in organization. On 25 August, the long fetch of southwesterly monsoon flow began to weaken between pre-Lois and Janis (10W) as the axis of the subtropical ridge began to build between these two systems (see the discussion section for a more detailed discussion of the effects of the monsoon flow on the motion of Lois). As the subtropical ridge strengthened to its north, the pre-Lois tropical disturbance responded with a slow counterclockwise turn to the west. Based upon intensity estimates of 25 kt (13 m/sec) made from satellite imagery, the first warning on Tropical Depression 13W was issued valid at 260000Z. The system was upgraded to tropical storm intensity twelve hours later. South of a strengthening subtropical ridge, Lois moved on a generally westward track. At 280000Z, Lois was upgraded to a typhoon, just as it touched the southern coastline of Hainan Island. Crossing the southern edge of Hainan Island, Lois passed close to the city of Yaxian (WMO 59948) where a minimum sea-level pressure of 981.9 mb was reported. Lois then spent a day crossing the Gulf of Tonkin (Figures 3-13-1 and 3-13-2), before moving ashore at 291600Z in a sparsely populated area of Vietnam. Bach Longvi, Vietnam (WMO 48839), reported a minimum sea-level pressure of 989.9 mb at 291800Z. Continuing westward, the system dissipated over the mountains of Laos, prompting the JTWC to issue the final warning, valid at 300600Z.

III. DISCUSSION

Influence of the southwest monsoon on tropical cyclone motion

Lois' northeastward motion during the period of its formation (23 through 24 August) was typical of that seen whenever a tropical cyclone is affected by deep southwesterly monsoonal winds that flow past that tropical cyclone to another tropical cyclone downstream. In the case of Lois, as Tropical Storm Janis (10W) crossed the region of Taiwan and the Ryukyu Islands, the southwest monsoon in the South China Sea extended to the north-northeast, linking with the circulation of Janis (10W) (Figure 3-13-3). A case can be made that the pre-Lois tropical disturbance moved northeastward in response to the monsoonal flow that had extended toward Janis (10W). By 26 August, Janis (10W) was recurving into mid-latitudes, and a ridge became established between it and Lois that severed the northeastward extension

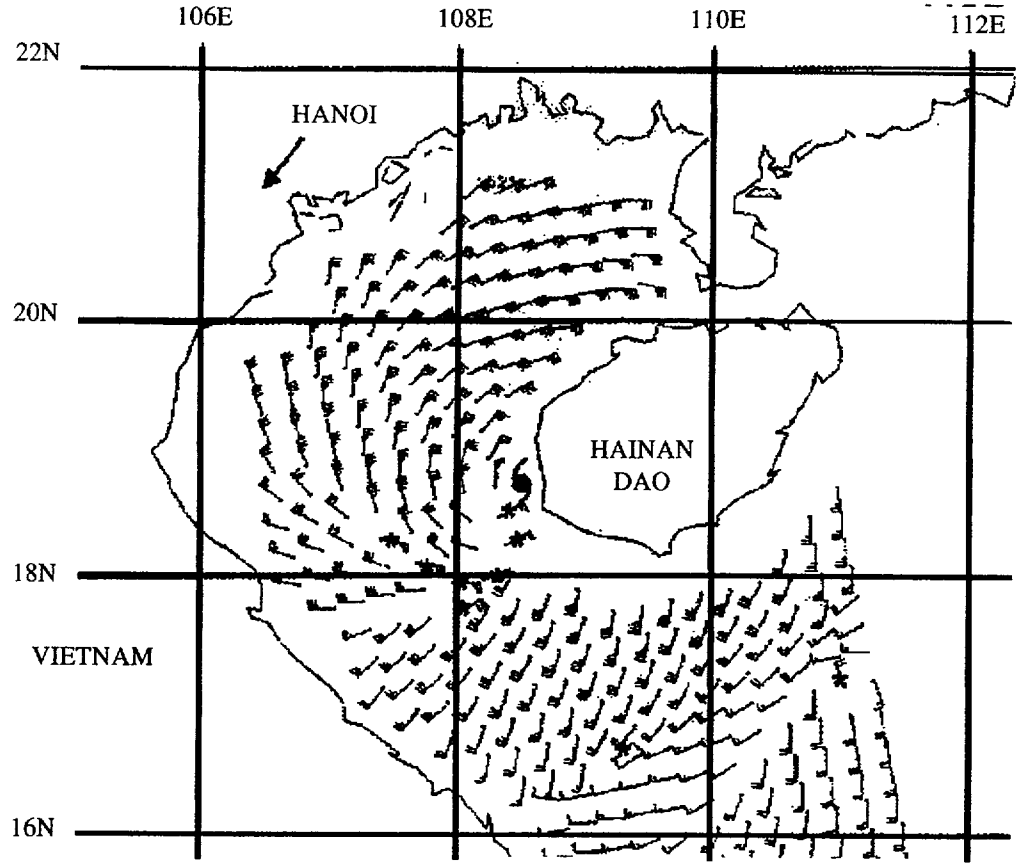

Figure 3-13-1 The surface wind field of Lois as it moves from Hainan Island into the Gulf of Tonkin as derived from the scatterometer aboard the ERS-1 spacecraft. Wind barbs that are 180 degrees in error are marked with an asterisk. Typhoon symbol marks the interpolated location of Lois (281500Z August ERS-1 scatterometer-derived marine surface winds).

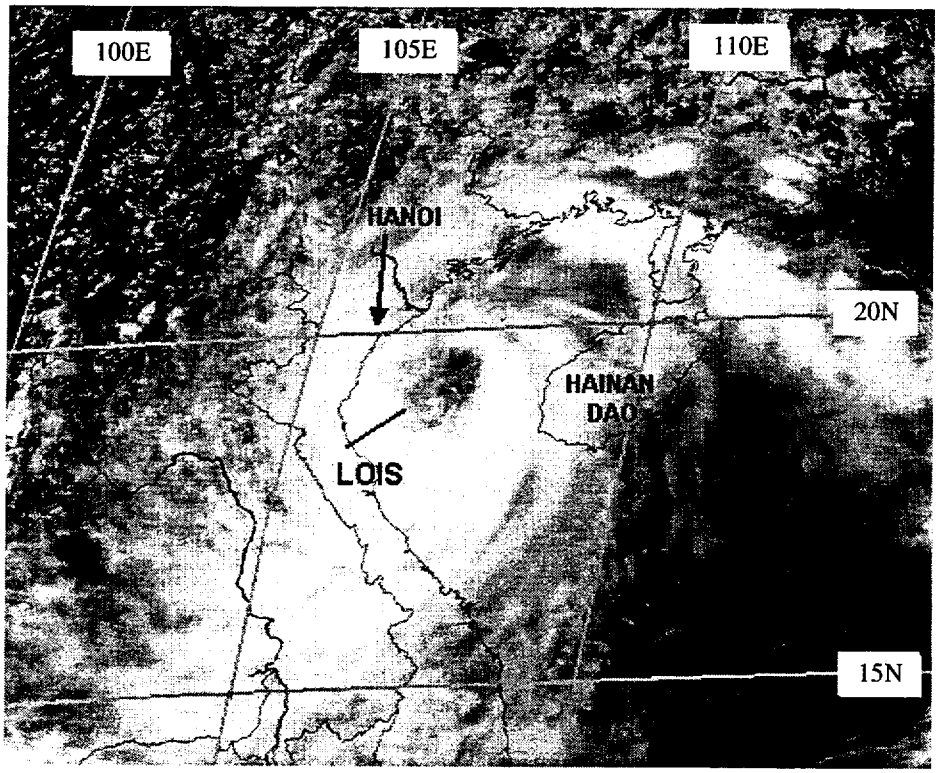

Figure 3-13-2 Typhoon Lois in the Gulf of Tonkin with a large 60 nm (110 km) diameter eye (290531Z August visible GMS imagery).

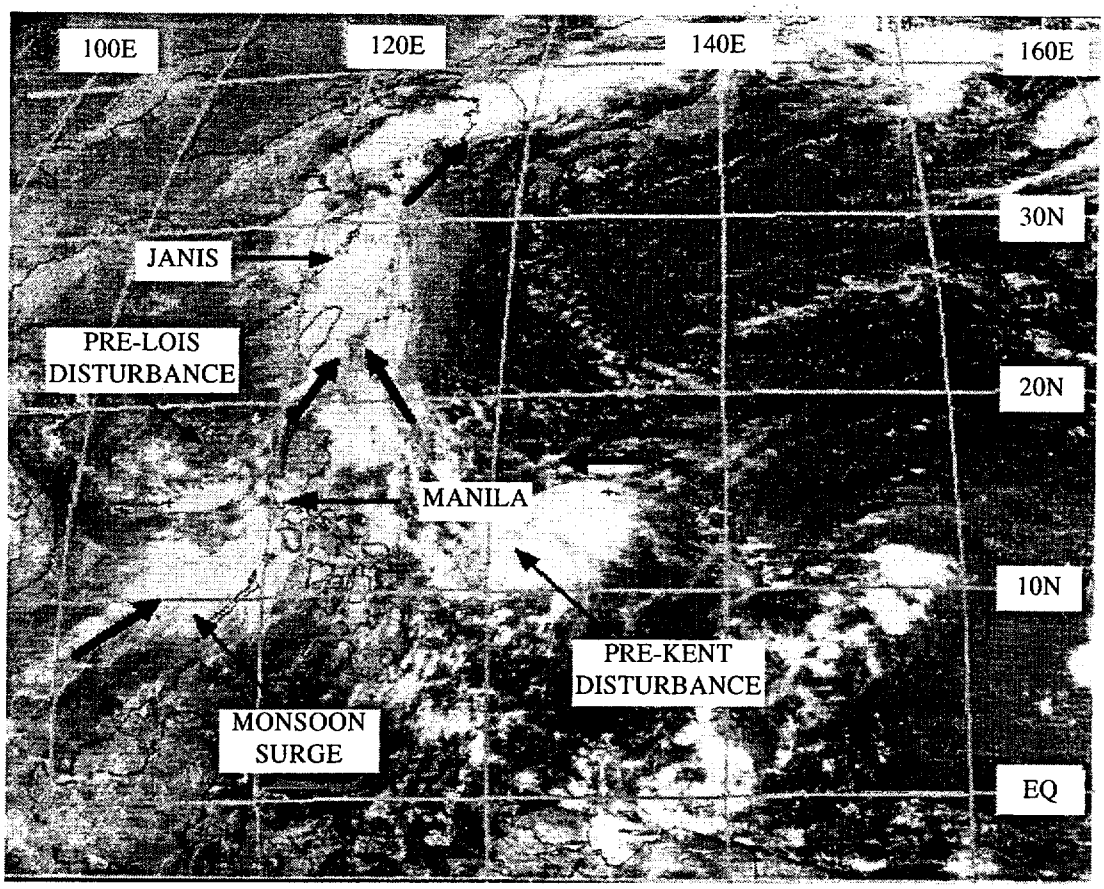

Figure 3-13-3 The southwest monsoon extends beyond the pre-Lois tropical disturbance and continues northeastward across the Philippines, then north-northeastward into Janis' circulation (242331Z August visible GMS imagery). Bold arrows depict the low-level wind flow. The locations of Janis (10W), pre-Kent (12W), and of pre-Lois are indicated.

of the southwest monsoon. In response to easterly flow south of the strengthening ridge, Lois turned toward the west.

IV. IMPACT

No reports of damage or injuries were received from China. In Vietnam, 45,000 acres of rice fields were reported flooded, with a total loss of the rice crop in nearly ten percent of the flooded acres. One hundred houses were destroyed and 2000 other homes were damaged in the province of Thanh Hoa, the hardest hit province. No reports of deaths or injuries in Vietnam were received at the JTWC.